

===== WPI =====

- TI - Inlet valve control device for four cycle IC engine - applies variable control of e.g. inlet valve switching time according to supercharging pressure in which valve operation angle from start to maximum lift is less or more than that from maximum lift to lift end
- AB - J10037772 The device controls the valve lift characteristic e.g. opening and closing switching time of an inlet valve according to the pressure of a supercharger. The inlet valve is built to a variable moving valve mechanism.
- When the supercharging pressure is high or low, the inlet valve operation angle from its lift start to a maximum lift is larger or smaller than the operation angle from the valve maximum lift to a lift end point, respectively. The operation angle ratios at the low or high supercharging pressures are lesser or greater than 1. The opening and switching times are variably controlled.
 - ADVANTAGE - Increases charging efficiency and compression ratio. Improves torque. Prevents possible engine knock and reverse flow of exhaust gas at high supercharging pressure.
 - (Dwg.4/4)
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- PR - JP19960194232 19960724
- PA - (NSMO) NISSAN MOTOR CO LTD
- MC - X22-A03C X22-A03G
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- AN - 1998-176145 [16]

===== PAJ =====

- TI - INTAKE VALVE CONTROL DEVICE OF INTERNAL COMBUSTION ENGINE WITH SUPERCHARGER, AND CONTROL METHOD THEREFOR
- AB - PROBLEM TO BE SOLVED: To variably control the opening/closing timing of an intake valve suitably by variably controlling the opening/closing timing of the intake valve so as to reduce the operating angle ratio between an up-operating angle from the lift start of the intake valve to a maximum lift and the down-operating angle from the maximum lift to a lift final point, smaller than a high boost pressure time at the time of low boost pressure.
- SOLUTION: In a device in which the opening/closing timing of an intake valve 5 is variably controlled by a variable valve system 11, a variable valve system 11 is formed in such a constitution that the eccentric position of an annular disk 29 is variable controlled through a first eccentric cam 41, a cam shaft 22 is rotated un- uniformly, a phase difference between the variable valve system 11 and a driving shaft 21 is generated. At this time, an operating angle ratio between the up-operating angle from a lift start in a valve lift curve and a maximum lift and the down-operating angle from the maximum lift to a lift final point so as to reduce at the time of low boost pressure and increase at the time of high boost pressure. The maximum lift is delayed at the time of high boost pressure, and approaches a bottom dead point, and thereby, it is possible to improve a filling efficiency by new air taking-in effect, and it is also possible to improve a torque.
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- AP - JP19960194232 19960724
- PA - NISSAN MOTOR CO LTD
- IN - NAKAMURA MAKOTO; AOYAMA SHUNICHI; TAKEMURA SHINICHI; NOHARA TSUNEYASU
- I - F02D13/02 ; F01L1/04 ; F01L1/26 ; F01L13/00 ; F02D23/00 ; F02D41/02 ; F02D43/00

INTAKE VALVE CONTROL DEVICE OF INTERNAL COMBUSTION ENGINE WITH SUPERCHARGER, AND CONTROL METHOD THEREFOR

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EC Classification:
Equivalents:

Abstract

PROBLEM TO BE SOLVED: To variably control the opening/closing timing of an intake valve suitably by variably controlling the opening/closing timing of the intake valve so as to reduce the operating angle ratio between an up-operating angle from the lift start of the intake valve to a maximum lift and the down-operating angle from the maximum lift to a lift final point, smaller than a high boost pressure time at the time of low boost pressure.

SOLUTION: In a device in which the opening/closing timing of an intake valve 5 is variably controlled by a variable valve system 11, a variable valve system 11 is formed in such a constitution that the eccentric position of an annular disk 29 is variable controlled through a first eccentric cam 41, a cam shaft 22 is rotated un- uniformly, a phase difference between the variable valve system 11 and a driving shaft 21 is generated. At this time, an operating angle ratio between the up-operating angle from a lift start in a valve lift curve and a maximum lift and the down-operating angle from the maximum lift to a lift final point so as to reduce at the time of low boost pressure and increase at the time of high boost pressure. The maximum lift is delayed at the time of high boost pressure, and approaches a bottom dead point, and thereby, it is possible to improve a filling efficiency by new air taking-in effect, and it is also possible to improve a torque.

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(54) 【発明の名称】 過給機付内燃機関の吸気弁制御装置および制御方法

(57) 【要約】

【課題】 過給圧に応じてバルブリフト特性を最適なものとし、充填効率を高めてトルクを向上させる。

【解決手段】 過給機を備えた内燃機関において、吸気弁側に可変動弁機構を設け、過給圧に応じてバルブリフト特性を制御する。高過給圧時には、図4の(イ)の特性とする。リフト開始から最大リフトまでの上り作動角 α_s が最大リフトからリフト終了点までの下り作動角 β_s よりも大きく、従って、作動角比 $M (= \alpha / \beta)$ は1よりも大である。これにより過給圧による新気の押し込み効果が利用できる。低過給圧時には、(ロ)の特性とする。この場合、リフト開始から最大リフトまでの上り作動角 α_p が最大リフトからリフト終了点までの下り作動角 β_p よりも小さくなり、従って、作動角比 M は1よりも小となる。これにより、バルブリフトの立ち上がりが早くなり、充填効率が向上する。

